

Borehole

41-15-10Log Event **A****Borehole Information**

Farm : <u>SX</u>	Tank : <u>SX-115</u>	Site Number : <u>299-W23-121</u>
N-Coord : <u>35,177</u>	W-Coord : <u>75,904</u>	TOC Elevation : <u>660.90</u>
Water Level, ft :	Date Drilled : <u>4/30/1962</u>	

Casing Record

Type : <u>Steel-welded</u>	Thickness : <u>0.280</u>	ID, in. : <u>6</u>
Top Depth, ft. : <u>0</u>	Bottom Depth, ft. : <u>125</u>	

Equipment Information

Logging System : <u>2</u>	Detector Type : <u>HPGe</u>	Detector Efficiency: <u>35.0 %</u>
Calibration Date : <u>03/1995</u>	Calibration Reference : <u>GJPO-HAN-1</u>	

Logging Information

Log Run Number : <u>1</u>	Log Run Date : <u>7/15/1995</u>	Logging Engineer: <u>Steve Kos</u>
Start Depth, ft.: <u>0.0</u>	Counting Time, sec.: <u>100</u>	L/R : <u>L</u> Shield : <u>N</u>
Finish Depth, ft. : <u>124.5</u>	MSA Interval, ft. : <u>0.5</u>	Log Speed, ft/min.: <u>n/a</u>

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Log Event A

Analysis Information

Analyst : A.W. PearsonData Processing Reference : Data Analysis Manual Ver. 1Analysis Date : 10/13/1995**Analysis Notes :**

This borehole was logged in one log run with the gain stabilizer operating. The pre- and post- verification spectra indicated that the logging system was operating properly. The energy/channel drift observed during the log run was minimal, but one additional energy calibration was necessary to process the data between 69.5 and 90.0 ft.

The casing thickness is 0.31 in.; the correction used for data processing was for 0.33-in.-thick casing. Therefore, a slight over-estimation of radionuclide activity was calculated. The borehole was dry and no water correction was required.

The only man-made radionuclide identified was Cs-137. This contaminant occurred from the surface to a depth of 10.0 ft, from 13.0 to 23.0 ft, at the bottom of the borehole, and at low concentrations at discontinuous locations along the borehole. The maximum measured subsurface concentration was about 18 pCi/g at 5.5 ft.

The absence of any repeat logging precluded judging the repeatability of the data. The total gamma-ray log indicates several distinct lithology changes in the interval from 60 to 90 ft.

Additional details regarding interpretation of the data for this borehole are presented in the Tank Summary Data Report for tank SX-115.

Log Plot Notes:

Three log plots are provided. The Cs-137 activity is plotted alone to provide details of activity and distribution.

The natural gamma-ray logs show the activities of the naturally occurring radionuclides potassium (K-40), uranium (U-238), and thorium (Th-232). The KUT plot is provided to allow correlation of lithologic features between boreholes. The KUT activities observed in this borehole are typical for Hanford Site sediments.

A combination plot incorporates the Cs-137 and KUT log data with the total gamma-ray count rate derived from the spectral gamma-ray data and the gross gamma-ray data acquired with the WHC Tank Farms gross gamma-ray logging systems. This plot allows correlation of the Cs-137 contamination zones with lithologic features and with the gross gamma-ray historic record.

The statistical uncertainty in a measurement is represented on the log plots by uncertainty bars where appropriate. This uncertainty is reported at the 95-percent confidence interval. The minimum detectable activity (MDA) of a radionuclide represents the lowest activity at which positive identification of a gamma-ray peak is statistically defensible. The MDA values are indicated on the log plots by open circles. If the reported activity is slightly above the MDA, the 95-percent confidence interval of the concentration may extend below the MDA value.

The Tank Farms gross gamma-ray plot is produced from the most recent data available from WHC. No corrections other than scale adjustments for plotting have been made to the data.